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Forest Insect Laboratory
Coeur d'Alene, Idaho

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SUBJECT—

TITLE

FOREST INSECT SURVEY
CLEARWATER NATIONAL FOREST
AND
CLEARWATER TIMBER PROTECTIVE ASSOCIATION
1942

Recommendations for Control
by
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Senior Entomologist

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FOREST INSECT
LABORATORY

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FOREST INSECT SURVEY
CLEARWATER NATIONAL FOREST
AND
CLEARWATER TIMBER PROTECTIVE ASSOCIATION
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Two areas on the Clearwater National Forest and five areas under the jurisdiction of the C.T.P.A. were surveyed during the past season to obtain data relative to the extent of mountain pine beetle infestation in the white pine stands. All of these areas were surveyed in 1941, so the 1942 work was in the nature of a recheck.

The areas surveyed and data taken are given in the following table:

Areas surveyed 1942

Unit	Acres	Infested trees per acre 1941	Infested trees per acre 1942	Infested trees on unit 1942	Percent of stand killed 1942
		National Forest			
Deadhorse	1,280	.25	.74	947	.7
Tepee Creek	1,280	.11	.60	768	1.0
		Clearwater Timber Protective Association			
Benton Creek	6,700	.0	.0	0	0
Butte Creek	2,000	.13	.50	1,000	.7
Thompson Creek	1,700	.12	.20	340	.2
Tepee Creek	640	0	1.25	800	.9
Silver Creek (LPP)	440	.73	1.80	792	4.0

SUMMARY OF UNITS

CLEARWATER NATIONAL FOREST

Deadhorse Creek 1,280 acres

The white pine stands on about 850 acres of the upper Deadhorse drainage are again seriously infested by the mountain pine beetle. On 30 acres of sample examined 32 infested trees were counted; nearly one-half were infested windfalls, however. In other parts of the drainage 38 acres of sample strip recorded only 7 infested trees, which indicates that the infestation is localized in the northern half of section 5, the northwest 1/4 of section 4 and a small part of section 32. The infested trees occur in groups of from 2 to 8 and are nearly always associated with infested windfalls. About .7 percent of the stand is

infested without considering the infested windfalls. It is estimated that there are nearly 900 infested trees in the 650-acre area described and about 50 infested trees in the lower part of the unit.

Tepee Creek 1,280 acres

Control measures directed against the mountain pine beetle infestation in the white pine stands of Tepee Creek during the spring of 1939 caused a reduction in the infestation which was noticeable from 1939 to 1941.

However, the stands are again infested to a serious extent. During the present survey 46 acres of sample were examined and 43 infested trees were recorded. Of these infested trees 16 were windfalls, of which there are quite a number in the drainage. It is thought that these windfalls have contributed to some extent to the increased number of trees infested by attracting the insects from the surrounding timber to a localized spot where a greater than normal proportion of the attacks were successful.

A common occurrence is to find one or two 1942 windfalls infested and two or more adjacent standing trees attacked. Often these standing trees, or some of them, have been struck and injured by the falling tree.

Although the data show nearly one tree per acre attacked, the estimate for the entire drainage is not high because the infestation is largely confined to a strip along Tepee Creek and on the steeper slopes above the forks. For the entire drainage it is estimated that there are .6 infested trees per acre.

The attacked trees are badly infested and have very heavy broods, most of which are of late summer origin. The trees are very green as yet and occur largely in groups of from 3 to 11 and are nearly always associated with windfalls. Without considering infested windfalls, one percent of the standing timber was infested in 1942.

It is felt that in view of the severity of the attacks in the windfalls and in the standing trees, an increase in the infestation can be expected in 1943.

CLEARWATER TIMBER PROTECTIVE ASSOCIATION

Benton Creek 6,700 acres

Several groups of red-topped trees in this drainage, reported by Mr. Curtis, were seen from a distance and were thought to be insect-killed Douglas fir. An examination was made in the timber along the northern side of the drainage in sections 13, 18, 19 and 24, and no recent insect-killed white pine were seen. Several groups of insect-killed Douglas fir were seen, however, one of which had 23 infested trees. The insect epidemic in this species has evidently been active for the past several years in the drainages. The timber stands of this area are largely mixed except in the head of the drainage, where logging is now in progress. On a meandering strip some 3½ miles long, less than 500 white pine were counted.

Butte Creek 2,000 acres

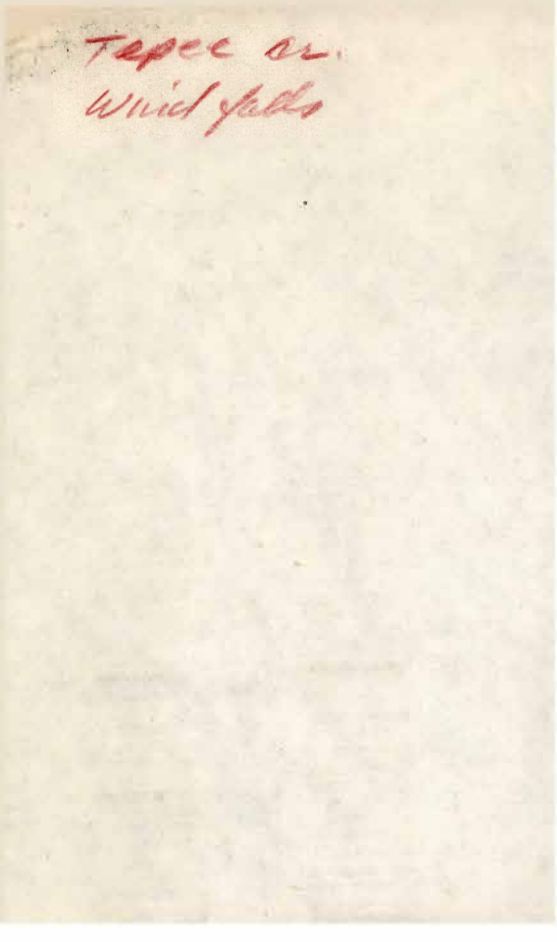
The Butte Creek drainage probably contains one of the finest stands of white pine in the Northwest. An infestation of the mountain pine beetle reported during 1941 in sections 8 and 17 of the drainage was reexamined during the present survey.

Data taken show an infestation of .50 infested trees per acre, but they can only be applied to an area of 2,000 acres on the east side of the drainage. No infested trees were found on the western side in 1941 and only a light examination was made during the present survey. By applying the infestation-per-acre figure to the 2,000 acres an estimate of 1,000 infested trees is obtained. These trees occur largely on steep ground which is from 20 to 40 chains wide, and extends approximately from the center of section 5 along the eastern side of the creek through section 8 and well into section 17. Infested trees occur occasionally as singles but more often as small groups of from 3 to 6 trees, and they are heavily hit and contain good broods which are mostly in the small larvae stage.

Thompson Creek 1,700 acres

Annual surveys have been made in this drainage for the past three years because there has been an incipient infestation in the white pine stands that has potential possibilities of assuming epidemic proportions. Moreover, the densely stocked young stand of nearly pure white pine is reaching a stage of stocking favorable to epidemic development.

During the 1941 survey the only infestation found consisted of a few groups of infested trees along the creek. In 1942, 31 acres of


Tepee or
Wind fields

sample strip were run and a general examination was made in the area. No important developments have occurred, but an apparent change has taken place in the infestation. Where in 1941 the infested trees were in small groups located near the creek, the 1942 infestation is higher per acre but scattered to a greater extent and does not occur in groups.

Tepee Creek 640 acres

A survey of the white pine timber in the Tepee Creek drainage under the jurisdiction of the Clearwater Timber Protective Association was made in connection with a survey of the timber on the national forest.

An area of young timber just north of the Washington Creek road in section 25 and a part of section 24 was found to be seriously infested, as were parts of the national forest land. On a meandering sample strip covering 15 acres 22 infested trees and windfalls were counted. However, on a longer sample strip running well up into section 24 and covering 26 acres, 11 infested trees were recorded. As in the national forest land of the drainage much of the infestation is in windfalls or in standing trees adjacent to windfalls.

The infested trees are heavily brooded and occur in small groups of from 2 to 6 infested trees. Because the area is very heavily stocked (nearly 100 pine per acre) the percentage of the stand killed in 1942 is only .9%. It is estimated that there are about 600 infested trees in the area.

Silver Creek (Orogrande drainage) 440 acres

A survey of the Silver Creek and West Elk Creek drainages of the Orogrande drainage was made to determine if the mountain pine beetle infestation, which has been very active in the lodgepole pine stands of the area for several years, was infesting the white pine. Timber stands in this area are a mixture of white pine, lodgepole pine and spruce. White pine is largely confined to the low ridges, while lodgepole pine predominates along the wide creek bottoms.

Sample strips covering 32 acres were run and the data show an infestation of 1.8 infested lodgepole per acre. No infested white pine were recorded and from further observations it is concluded that the infestation, while severe, is still confined to lodgepole pine.

CONCLUSIONS

There are several areas where the mountain pine beetle infestation is building up to serious proportions on the national forest and C.T.P.A. holdings. Further increases are likely to occur in both the Tepee and Deadhorse drainages during 1943. In the Tepee Creek drainage the area under C.T.P.A. management is also seriously infested and here the infestation is also apt to increase in 1943. Other areas of C.T.P.A. ownership which are heavily attacked are: Butte Creek northeast of Bertha Hill, and a part of Silver Creek in the Orogrande drainage. In the Butte Creek drainage the infestation is not taking a very high percentage of the stand as yet, but there is danger of a build-up. The infestation in the Silver Creek area is still confined to lodgepole pine and constitutes a threat to the extensive stands of white pine in the adjacent Orogrande drainage. An annual check of this area must be made as long as this infestation is active.

C O P Y

Forest Insect Laboratory
Coeur d'Alene, Idaho

September 22, 1942

To: Regional Forester, Missoula, Montana
Attention of Mr. Koch

From: James C. Evenden, Senior Entomologist, Coeur d'Alene, Idaho

Subject: Mountain Pine Beetle Infestation, Clearwater National Forest

Mr. Terrell reports the existence of two serious infestations of the mountain pine beetle on the Clearwater National Forest and adjacent lands of the Clearwater Timber Protective Association. These infestations are in the white pine stands of the Tepee Creek and Dead Horse Creek drainages.

Tepee Creek

You will recall that control measures were instituted in the white pine stands of the Tepee Creek drainage in the spring of 1939. Following this operation there was a material reduction in the infestation, which persisted from 1939 to 1941. There has been a rather serious blowdown in this area and it is thought that these windfalls may have contributed to the present condition by localizing the infestation. The infestation occurs in groups of infested trees and in most instances there are one or two 1942 windfalls associated with two or more standing infested trees.

Although the infestation is distributed throughout the entire drainage, there is a concentration of infestation on a strip along Tepee Creek and on the steeper slopes above the forks. In this area of heavy infestation Mr. Terrell's data indicate that there is approximately one infested tree per acre. For the entire drainage the infestation is placed at .6 of an infested tree per acre. Adjacent to the Tepee area in the timber stands of sections 24 and 25, which are under the supervision of the Clearwater Timber Protective Association, a similar condition exists. Here also windfalls seem to have played some part in building this infestation to its present severity. In both areas the infested trees, which include windfalls, are infested with large broods

of developing beetles, with every indication pointing to a marked increase in the 1943 infestation. Survey data indicate the following numbers of infested trees:

Tepee Creek, Clearwater National Forest

Infested trees	800
Percent of infested trees which are windfalls	38
Percent of stand destroyed	2.7

Tepee Creek Unit, Clearwater Timber Protective Association

Infested trees	1000
Percent of infested trees which are windfalls	20
Percent of stand destroyed	2.2

Dead Horse Creek

On about 800 acres in the upper Dead Horse Creek drainage there is again a serious infestation of the mountain pine beetle in white pine. The same condition as described for the Tepee areas prevails in this drainage, with windfalls in association with infested trees and apparently contributing to the existing situation. It is estimated that there are 1000 infested trees in this area, of which 48 percent are windfalls, with approximately 1.3 percent of the stand being destroyed by this year's infestation.

In view of the present and subsequent potential seriousness of the mountain pine beetle infestation within these areas, as well as the value of the timber stands involved, it is recommended that control measures be instituted in the spring of 1943. Artificial control or some other remedial action is considered necessary to protect the residual timber values. Past losses of timber have been heavy, and it is estimated that from 20 to 25 percent of the white pine trees within these two drainages have been destroyed by the mountain pine beetle since 1925. The institution of artificial control will reduce the present threat of a destructive epidemic for a period of 2 to 4 years. However, as past losses indicate that these timber stands are highly susceptible to infestations of the mountain pine beetle, the results obtained from control will not be permanent. It is realized that the treatment of these trees will be expensive, involving an expenditure of perhaps $20,000. It is also realized that labor may not be available for such an operation. However, our recommendations have been based upon the entomological aspects of this situation, which are justified by the potential threat of the existing infestation to the future of the residual timber stands.

James C. Evenden